Part 3.

# The Evening Star.

Pages 1-10.

WASHINGTON, D. C., TUESDAY, DECEMBER 16, 1902


# MAKING A MODERN NEWSPAPER

## Remarkable Changes That Have Occurred in Fifty Years.

## HAND COMPOSITION SUPERSEDED

### One Linotype Machine Does the Work of Several Men.

### THE STAR'S UP-TO-DATE PLANT FOR THE TRANSFORMING OF COPY INTO THE DAILY EVENING PAPER.

Half a century!

What marvelous changes have been wrought in the process of getting out a great daily newspaper within that time!

Typesetting by hand, the old "man-killer" hand press—these and many other things that were utilized by the newspapers of fifty years ago—have been relegated. They were time-honored devices. They did their work well for the day, but fell by the wayside, victims of the relentless and unsentimental hand of progress.

The steady growth of population, with the attendant increased demand for reading, was a stimulus to the inventive minds of the country. From time to time improved machinery has been brought into requisition, until today it would seem that the acme had been reached. Yet who can tell what the future may bring forth?

From its inception The Evening Star has kept abreast of the times. Its management, ever broad minded, has aimed to adopt the latest and most improved machinery.

Before the introduction of machine composition, which has become general only during the last decade, all typesetting was done by hand. A larger number of employes was necessary, as the work was slower and more laborious. Up to the time that the first Mergenthaler linotype was placed in use by a newspaper, it was universally conceded that nothing in the way of invention could ever supplant hand composition. The compositor and every one else who gave the question thought were of the firm belief that human hands, directed by the mind, must for all time to come place on end the "leaden messengers of thought," and that the reading public would ever be dependent upon the hand compositor.

#### Came as an Innovation.

The linotype came as an innovation. Many of the leading publishers of the country were skeptical as to the advisability or expediency of depending on machine for daily composition. Not a few publishers declared that it was impracticable. But progress—that had given to the world the telegraph, the telephone, electric light and other equally marvelous inventions—cold, unsentimental progress had declared that hand composition was obsolete; the world must recognize it as such.

There were a few newspaper publishers in the country who foresaw the possibilities of the Mergenthaler linotype. The management of The Evening Star was among the first to install machines in its composing room. The first issue of The Evening Star by machine composition was in June, 1893.

Fourteen linotypes were utilized in the beginning, and later, when it became necessary to print sixteen to twenty pages a day, because of the demand for space by advertisers, the battery of machines was increased to twenty. These machines are in constant daily use and they produce all the reading matter and much of the plain reading in the advertisements that appear in the pages of The Evening Star.

#### The Old Method.

The object of this article is to show in a concise way the development of composition and printing during the half century of the existence of The Evening Star and to do this it will be necessary—not uninteresting perhaps—to describe briefly the old method of setting type. Each compositor had to himself a stand, on top of which were two pairs of cases. A pair consisted of an upper and lower case. In the upper case were the capital letters of the type used for reading matter. Small capitals, diphthongs, printing signs and fractions also had respective representation in the upper case. The lower case contained the smaller letters (technically called "lower-case" letters in consequence), figures, commas and points, spaces to put between the words, "quads," etc. The cases were really wooden trays divided into boxes.

The lower case was arranged not alphabetically, but so that the letters most used would be nearest the compositor's hand and have the largest compartments, an ingenious arrangement for saving labor. With his copy before him, and provided with a metal instrument, called a "stick," the compositor picked up the necessary letters to form words and sentences. Each line was carefully spaced out to fit accurately into the stick before proceeding to the next line. This was the one great thing that was supposed to stand in the way of machine composition. It was argued by printers that no machine could ever be invented that would space out the lines.

When the "stick" was full the "matter" was carefully lifted with the fingers, aided by the setting rule, and put on to a galley, a brass tray with wooden sides and about two feet in length. When the galley was full, or the "take," or article, was ended, a proof was taken and read by the proofreader to mark any errors the compositors might have made.

When all the corrections were made the galley was sent, with many others, to the "forms" to be made into pages. The machine composition is placed upon galleys in the very same way, and the process of proofreading and correction is similar, with the exception of in the latter, where a single error means the setting over of the whole line, as the line is one piece of metal in itself.

#### Good Old Days.

Those were good old days, the days of hand composition. A rollicking, happy-go-lucky set were the printers of the ante-machine period. They were men of bright intellects. Many of the best-known journalists and authors of today obtained their early training "at the case." The "art preservative," as the trade was called, was a school in itself.

By the old process the cases had to be replenished when they were "set out." This was called distribution. The compositor lifted from the forms a handful of type after it was thoroughly wet, and, holding it securely in the left hand, proceeded with the fingers of the right hand to return the letters to their respective boxes. This was a much quicker process than the setting of the type. The compositor became so proficient in the work of distribution that the letters took their places almost as if by intuition.

Compositors on morning newspapers usually repaired to the composing room a few hours before time was called in the evening and "threw in" their cases. If a compositor was anxious to use the time the following afternoon he remained in the office after the "jig was up" or "30" was in, expressions used to convey the information that the paper had gone to press, and distributed his cases before seeking his bed. On evening papers distribution was done before leaving the office in the afternoon.

The composing room was always a place where good fellowship existed, and one might hear the choicest bits of repartee and wit when the men were assembled for their work." Not so is it now. The noise of the machine makes conversation among the "operators," no longer compositors, almost out of the question. In the old days compositors working side by side oftentimes carried on interesting and animated conversations while their fingers were constantly traveling back and forth from the boxes of the cases to the sticks and all kinds of copy was being transformed into columns of reading matter in cold type.

#### Machine Composition.

The linotype machine, of the kind used in the composing room of The Evening Star, is not a type setting machine in the ordinary sense of the word, although that term is often used in referring to it. On the contrary, it is a machine which, being operated by finger keys like a typewriting machine, creates or produces type matter ready for use on the press or stereotyping table.

The machine marks a side departure from the ordinary methods of using single line letter type. It produces and assembles side by side metal bars or slugs, each the length and width of a line of type, and having on the upper edge the type characters to print an entire line. These bars, having the appearance of solid lines of type and answering the same purpose, are called "linotypes." When assembled side by side they constitute jointly a form composed of ordinary type and adapted to use in the same manner.

After being used the linotypes are returned to the melting pot to be recast into other lines, thus doing away with distribution. The production of the linotypes is an interesting process. The machine contains as its leading members a large number of small brass matrices. The cut of one of these matrices looks like a big letter Y. These matrices consist each of a flat plate, having in its vertical edge a female letter or matrix, and in the upper end a series of teeth. There are a number of matrices for each letter or character represented in the keyboard.

The machine is organized to select matrices bearing the required characters, and set them up in line side by side, with intervening spaces, in the order in which they are to appear in print, and thereafter to present the line to a mold so that the linotypes or slugs may be cast against and into the entire line of matrices at one operation.

The operations are effected by a mechanism which represents in outline the principal parts of the machine. There is an inclined stationary magazine or holder, containing channels in which the assorted matrices are stored. The matrices tend to slide downward out of the magazine by reason of their gravity, but they are held in check by escapements, one at the mouth of each channel. From these escapements, rods are extended downwards to a series of finger keys. There is a special key for each character or letter. The keys are depressed by the operator in the order in which the corresponding characters are to appear in the print.

Each time a key is actuated it permits a single matrix, bearing the corresponding character, to fall out of the mouth of the magazine and downward through the channels to an incline traveling belt, by which the matrices are carried downward one after another, and delivered into the slotted assembling block in which they are set up or composed side by side in a line or row.

A stationary box contains a series of spaces and a delivery device connected with finger bar by which the spaces are discharged and permitted to fall into the line at their proper places. Thus it is that, by operating the keys, the required matrices and spaces are delivered one after another and assembled in line in the block until it contains all the characters necessary to complete one line of print.

After the line of matrices is composed it is transferred to the face of a vertical mold wheel, through which a slot or mold proper extends from the front to the rear face. The entire row of characters in the matrix line is presented directly opposite the face of the mold or slot, so that when the mold is filled with metal to produce a slug or linotype the metal will flow into the matrices, which produce their respective type characters in relief on the edge of the casting.

#### Casting the Solid Lines.

Behind the mold wheel there is arranged a pot in which type metal is maintained in a molten condition by a flame from the gas burner thereunder. The pot has a delivery mouth or channel adapted to fit against and close the rear face of the mold. Within the pot there is mounted a mechanically operated pump plunger. After the line of matrices is presented and locked against and across the face of the mold, the mouth of the pot is closed against the rear side of the mold, and the plunger then operated to force the molten metal from the mouth of the pot into the mold, in which it solidifies, completing the slug or linotype.

After the linotype is thus produced, the mold wheel makes a partial revolution, turning the mold slot from the horizontal position in which it stood during the casting operation to a vertical position. While the mold stands in this position, a horizontal blade advances from the rear and pushes the linotype forward out of the mold and between trimming knives into the galley on the front of the machine. A vibrating arm advances the linotypes one after the other along the galley, into which they are thus assembled side by side in column form ready for immediate use.

#### Distribution of Matrices.

After the assembled matrices have answered their purpose in front of the mold it is necessary to distribute and return them to the magazine, from which they are again in due time discharged in different order for use in succeeding lines.

After the casting operation the line of matrices, having answered their purpose, is lifted vertically and then shifted laterally until the teeth engage the teeth of the plate. This plate then rises, lifting the entire line of matrices to the distributing mechanism at the top of the magazine. The spaces remain behind when the matrices are lifted to the distributor, and are transferred laterally to the box or holder, to be used again.

The distribution of the matrices to their proper channels is effected by mechanism of extreme simplicity. Each matrix has the teeth arranged in a peculiar order or number, according to the letter which it bears. In other words, a matrix bearing any given letter differs as to the number or adapted to engage the teeth of the matrices bearing any other letter, and these teeth are relied upon as the means for effecting distribution. A rigid metal bar is fixed in position above the open upper ends of the magazine channels, and is formed at its lower edge with longitudinal teeth or ribs adapted to engage the teeth of the matrices and hold the latter in suspension. The ribs of the distributor bar vary in number and arrangement at different points in its length, there being a special arrangement over the mouth of each channel of the magazine. The matrices to be distributed are simply pushed horizontally along the bar at one end so as to hang suspended therefrom, and then moved slowly along it over the mouths of the channels.

Each matrix will remain in engagement with and be suspended from the teeth of the bar until it arrives over its proper channel, where the arrangement of teeth permits the matrix to disengage so that it falls directly into the channel. This produces a falling action of certain matrices into their respective channels, while other matrices are continuing their course along the bar to their proper points of delivery. The movement of the matrices is effected by means of longitudinal screws which lie below the distributor bar in position to engage the edges of the matrices and slide them along the bar.

#### Printing the Latest News.

With a composing room so complete in every detail, in line with every other department of the paper, is it any wonder that The Evening Star is enabled to print every day all the news of the District of Columbia—local and departmental—and of the world up to the very hour of going to press?

That is what The Evening Star pretends to do, and it does do it literally. It has long been the subject of interesting comment, particularly on the part of newspaper correspondents in Washington and others who are more or less familiar with getting out of a daily newspaper, the appearance in the columns of The Evening Star of accounts of news occurrences almost simultaneous with the issuing of the paper.

The new building of The Evening Star was constructed with the paramount idea of time saving in all its appointments. System, method and discipline are the other prerequisites for accomplishing the desired result.

The reader has a fair idea of how the material for The Evening Star was formerly "set up," and is familiar with the method of composition that has come into vogue within the last decade. He finds himself, now with the "make-up." Upon the man who makes up the paper lies the responsibility for the artistic or non-artistic appearance of its pages. He is the man who determines where certain articles shall be placed. He singles out the best pieces of news for the first page. He sees that the pages are constructed symmetrically.

#### The "Making-Up."

The "make-up" on the Evening Star, as is true with nearly all the large papers of the country, is the managing editor. Throughout the day he has been in touch with the main features of the news. He has had a set of proofs of everything put in type and he knows what is awaiting him on the galleys in the composing room. He goes to the composing room about 1:45 every afternoon and from that time until the last page goes to the stereotyper there is a constant hustle.

From what might seem chaos to one unfamiliar with composing room scenes an hour or so before geing to press the pages of The Evening Star are constructed in double-quick time and without a hitch. Day in and day out and at the same minute the wheels of the giant presses in the basement of the annex begin to revolve. To maintain this unbroken record there must be no delays in any part of the process of making the complete newspaper. The labors of the "make-up" are not easy by any means.

The "copy" as it comes from the editors through pneumatic tubes to the copy desk of the composing room is cut up into what are known as takes. For instance, a column article—story is the name applied in a newspaper office to every piece of news, no matter how short or how long—may be cut into ten, twenty or a greater number of "takes," and as many compositors, operators rather, may be working on it at the same time. This is done for the sake of expediency. One story may come to the "make-up" in sections on a number of galleys. The "make-up" and his assistants must "keep tab" on everything and see that there is no break. That more errors do not creep into the columns of every daily newspaper of any size can be little short of marvelous to those who do not fully appreciate the system of getting a paper out on time.

#### Quick Work at Press Time.

Time and again an important piece of news that came to the editor or copy reader a minute or so before the last page was closed has found its way into the paper. Usually only a few lines, a simple statement of facts, can be used at this hour. The operator who sets the heads is told the line. It is up in a jiffy. In the meantime the fingers of another operator have begun to move over the keyboard of his machine, setting up the news paragraph. The "make-up" has been told of the important piece of news and about how much space will be required. The rest of the page is being thrown together all the time with the thought of the last news item that is being put into type.

A hurry-up call is made. The galley man stands waiting for the last line. A proof is taken. The proofreader scans it. In the meantime the story in type has been passed to the forms and it has been placed in the page. There is an error in one of the lines. The operator has reset the line. The page is being locked up. The operator hastens to the form. The imperfect line is taken out and a perfect one substituted. The page is locked and is trundled away to the matrix room. Not a second has been lost.

A year or two ago one of the men who assisted in the making up of The Evening Star was formerly a base ball player and good at a catch. It was time that the last page was due in the matrix room. The page must be closed. An important piece of news, for which the page had been held a minute over time, had been placed in the form and it was being locked. The proofreader discerned a glaring error. An operator reset the line.

"Can't wait a second," the make-up yelled.

"Here you are," replied the operator, who was in a remote part of the room.

"Let 'er come," the former base ball player shouted.

The leaden line was thrown by the operator. The assistant "make-up" caught it. The imperfect line had been left on end in the page. It was removed, the perfect line took its place, and in another instant the machine, a damp matrix is laid upon it with the tissue face downward, and on top of this a blanket is placed. The form, as thus arranged, travels back and forward under the large roller. After the matrix has been rolled it is dried on the form of type in the steam drying press, a blanket having been previously placed on top of the matrix. Three of these steam tables are used in rushing the work of preparing the matrices for the casters of the plates that are adjusted to the cylinders of the presses and from which the bright pages of The Evening Star are printed. In preparing the matrix for casting the sides and top of the matrix sheet are trimmed, leaving a margin of about a quarter of an inch outside the bolster.

The face of the matrix now has French chalk brushed over it with the chalk brush. Then it is placed in the "roaster." This is a revolving cylinder, underneath which are several score of gas jets. In this device the matrix is made thoroughly dry. All this work has been done on the eighth floor of The Evening Star building, in a large room adjoining the composing room.

#### In the Press Room.

In the basement of the building, in a room near that where are the big web-perfecting presses, brawny-armed men are waiting the arrival of the completed matrix, which is conveyed to them in the carriage of a dummy elevator. It is the matrix of the last page before going to press, we will say. Not a moment is to be lost; and as a rule not a moment is lost.

With The Evening Star, as is true of nearly all great newspapers, the first and the second pages are the last to be made up. This is done that the latest and most important news may be brought to the reader's attention on unfolding the paper. It also bears out the Biblical injunction that the first shall be last and the last shall be first. In this room are all the most modern devices and appliances known to stereotyping. In a huge cauldron are hundreds of pounds of molten type metal which will soon be transformed into a plate, the impression of which is necessary for the complete impression of the day's paper. For dipping the liquid metal out of the furnace and pouring it into the mold a big iron ladle with two handles is used. The matrix is arranged in the casting mold and secured by means of the head and side guages.

A piece of matrix paper is next placed in the open end, the cover fastened down. Then the trip lever is moved and the mold takes an upright position ready for the pouring of the metal. The casting mold is opened and the semi-cylindrical plate is placed on what is known as the cutting-off cylinder, on which the ends of the plate are beveled so that the clamps on the revolving cylinders of one of the big printing presses will hold it securely.

The finishing cylinder gets the plate next. The plate is held securely on this machine while its sides are being chiseled and trimmed. The shaving machine shaves out the inside of the stereotype plate, so that it will be of uniform thickness, and it is ready for the press.

#### Ready for Printing.

Six or eight minutes have elapsed since the page of type left the eagle eye of the foreman of the composing room. Through all the different processes there has not been a hitch. A few seconds more and the wheels of one of the giant presses begin to move. The huge continuous roll of white paper that feeds the press is being converted into Evening Stars—printed, cut, folded and counted—at the rate of many thousands an hour.

But the stereotypers are still at work—three more casts of the last (first) page are being turned out. The rattle of another press adds to the din of noise; still another, until the four big presses are combining to satisfy the demands of The Evening Star's patrons.

The press room of The Evening Star in the basement of the annex is admirably adapted for the purpose. The four big web perfecting presses have each a capacity of 12,000 ten, twelve or sixteen-page papers an hour, and 24,000 four or eight-page papers an hour.

This, mind you, means the printing, folding and counting of the papers. The presses that turn out the big edition of The Evening Star daily are known as the Potter press. They were built specially for The Evening Star. The cost of them alone exceeded the amount of money invested in many entire newspaper plants of the country.

#### The Perfecting Presses.

A complete description of the working of the presses is not necessary in connection with this article, as there are few persons in Washington who have not watched the lightning-like rapidity with which the papers are turned out ready for the reading public. Every afternoon in the year crowds stand in front of the big windows of the annex building and gaze with wonder at the marvelous machinery.

With the primitive hand press on which the first issue of The Evening Star was printed fifty years ago it would require many days to get out one regular edition of The Evening Star of today. In perhaps no other part of the publishing business has there been such rapid strides as in that of press printing. When The Evening Star, because of increased business, discarded the old Franklin hand press, it adopted the use of a single large cylinder press. This was considered the acme of invention in its day.

One side of a paper was printed at a time and the sheets were fed by hand from a big feed board on top. The cylinder revolved and the forms of type on a flat bed which went back and forth coming in contact with the cylinder producted the impression. From this to the double cylinder and later to the four-cylinder press was a great step. This latter press, printed from type locked in semi-circular "turtles," performed its mission well until still further demands for faster printing brought stereotyping and the web perfecting press into requisition.

The seeming lack of modesty in assuming

## The Editorial Staff of The Evening Star.